

AN 131:312881 HCA
TI Precipitation hardened silicon steel for machine parts
IN Shimizu, Takayasu; Shimizu, Yoshiyuki
PA Nippon Silicolloy Kogyo K. K., Japan
SO Jpn: Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|-------------|------|----------|-----------------|----------|
| PI | JP 11293410 | A2 | 19991026 | JP 1998-94456 | 19980407 |
| | JP 2954922 | B2 | 19990927 | | |
| | JP 2954922 | B1 | 19990927 | | |

AB The steel contains C .ltoreq.0.10, Si 2.0-9.0, Mn 0.05-6.0, Ni 1-24, Cr 6-28, Mo 0.2-4.0, Nb 0.03-2.0, Cu .LAMBDA.<4.0, W .ltoreq.4.0, Co .ltoreq.3.0, Al .ltoreq.1.0, Ti .ltoreq.2.0, V .ltoreq.4.0, B .ltoreq.3.0, Ce .ltoreq.0.4, and La .ltoreq.0.4%. The parts of the steel which require hard hardness are heat treated by the process including operations 1-2-3 described below. The parts of the steel which do not require hard hardness are heat treated by the process including operations 1-3 or 1-2. (1) Heating to 900-1100.degree., rapid cooling, and aging at 600-700.degree.. (2) Heating to 950-1150.degree. and rapid cooling. (3) Aging at 400-600.degree.. The pptn. hardened steel has good mech. properties and is suitable for various machine parts.

AN 118:64201 HCA
TI Sintered high-speed steels
IN Hamada, Akira; Fujita, Hideo; Funakoshi, Atsushi; Katayama, Yoshio
PA Kubota, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| | ----- | --- | ----- | ----- | ----- |
| PI | JP 04221044 | A2 | 19920811 | JP 1990-418062 | 19901219 |
| | JP 2791445 | B2 | 19980827 | | |
| AB | The steels contain C .ltoreq.1.7, Si .ltoreq.0.6, Mn .ltoreq.0.6, Cr 3-8, Mo 3-9, W 5-14, Co 7-14, and V, Ti, and/or Nb >8 and .ltoreq.11%. The steels optionally contain .ltoreq.2% B and/or .ltoreq.3% Ni. The steels have resistance to seizing, wear, and surface roughening. | | | | |

AN 118:64220 HCA
TI Sintered high-speed steels suitable for roll cladding
IN Hamada, Akira; Fujita, Hideo; Funakoshi, Atsushi; Katayama, Yoshio
PA Kubota, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|-----------------|----------|
| | ----- | --- | ----- | ----- | ----- |
| PI | JP-04221045 | A2 | 19920811 | JP 1990-418063 | 19901219 |
| | JP 2775614 | B2 | 19980716 | | |
| AB | The sintered steels contain C .ltoreq.1.7, Si >0.6 but .ltoreq.3.5, Mn .ltoreq.0.6, Cr 3-8, Mo 3-9, W 5-14, Co 7-14, and V, Ti, and/or Nb >8 but .ltoreq.11%, optionally with B .ltoreq.2 and/or Ni .ltoreq.3%. Mill rolls clad with the sintered steels show resistance to wear and surface roughening. | | | | |

AN 118:64222 HCA
 TI Sintered high-speed steels suitable for roll cladding
 IN Hamada, Akira; Fujita, Hideo; Funakoshi, Atsushi; Katayama, Yoshio
 PA Kubota, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 04221047 | A2 | 19920811 | JP 1990-418065 | 19901219 |
| | JP 2775615 | B2 | 19980716 | | |
| AB | The sintered steels contain C .ltoreq.1.7, Si >0.6 but .ltoreq.3.5, Mn .ltoreq.0.6, Cr 3-8, Mo 3-9, W 5-14, Co 7-14, and V, Ti, and/or Nb .ltoreq.8%, optionally with B .ltoreq.2 and/or Ni .ltoreq.3%. Mill rolls clad with the sintered steels show resistance to wear and surface roughening. | | | | |

AN 120:250171 HCA
 TI Centrifugal-casted sleeve rolls and their manufacture
 IN Hashimoto, Tadao; Aranaka, Hiromasa; Myai, Naomichi; Kataoka, Yoshihiro
 PA Kawasaki Steel Co, Japan
 SO Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN. CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|-----------------|----------|
| PI | JP 05306426 | A2 | 19931119 | JP 1992-135730 | 19920430 |
| AB | The sleeve rolls are manufd. by depositing Fe alloy outer layers, contg. | | | | |

C
 1.0-3.5, Si .ltoreq.2.0, Mn .ltoreq.2.0, Cr .ltoreq.12.0, Mo .ltoreq.8.0, V 3.0-10.0 and Nb 0.6-7.0%, on the surfaces of graphite steel inner layers, contg. C 1.0-2.0, Si 1.6-2.4, Mn 0.2-1.0, P .ltoreq.0.05, S .ltoreq.0.03, Ni .ltoreq.0.7, Cr .ltoreq.3.5 and Mo .ltoreq.3.0%, to form integrates, resp. Optionally, the outer layers also contain Ni .ltoreq.8.0, Co .ltoreq.10.0, Cu .ltoreq.2.0, Ti .ltoreq.2.0, Zr .ltoreq.2.0, W .ltoreq.1.0 and/or B .ltoreq.0.1%. Preferably, the outer layers satisfy V + 1.8Nb .ltoreq.7.5C - 6.0%, and 0.2 .ltoreq. Nb/V .ltoreq.0.8. In the process, mixing ratio of the outer layer to the inner layer is controlled at 5-30%. The rolls show wear- and crack resistance, and toughness.

AN 120:250172 HCA
TI Centrifugal-cast sleeve rolls and their manufacture
IN Hashimoto, Tadao; Aranaka, Hiromasa; Maeda, Minoru; Kataoka, Yoshihiro
PA Kawasaki Steel Co, Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|--|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 05306427 | A2 | 19931119 | JP 1992-135731 | 19920430 |
| AB | The sleeve roll comprises bonded together an inner layer of ductile cast iron contg. C 2.8-3.8, Si 2.0-3.0, Mn 3.0-1.0, P .ltoreq.0.10, S .ltoreq.0.04, Ni 0.3-2.0, Cr .ltoreq.1.5, and Mo .ltoreq.1.0% and an outer layer of a Fe alloy contg. C 1.0-3.5, Si .ltoreq.2.0, Mn .ltoreq.2.0, Cr .ltoreq.12.0, Mo .ltoreq.8.0, V 3.0-10.0, Nb 0.6-7.0, and optionally Ni .ltoreq.8.0 and/or Co .ltoreq.10.0%. Optionally, the outer layer contains Ni .ltoreq.8.0, Co .ltoreq.10.0, Cu .ltoreq.2.0, Ti .ltoreq.2.0, Zr .ltoreq.2.0, W .ltoreq.1.0, and/or B .ltoreq.0.1%. The roll shows toughness and resistance to wear and cracking. | | | | |

AN 124:182277 HCA
 TI Chromium-molybdenum steels for cold-working dies and rolls
 IN Matsuda, Yukinori
 PA Daido Steel Co Ltd, Japan
 SO Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----|---|------|----------|-----------------|----------|
| PI | JP 07316739 | A2 | 19951205 | JP 1994-106729 | 19940520 |
| AB | <p> The tool steels contain: (a) C 0.75-1.15, Si 0.45-1.5, Mn .ltoreq.1.5, Cr 4.5-7.0, Mo 3.0-6.0, W .ltoreq.3.0, and V 0.5-2.5% with (2Mo + W) 8-14%; or (b) C 0.78-0.95, Si 0.6-1.0, Mn 0.1-1.5, Cr 5.1-6.0, Mo 4.0-5.5, W .ltoreq.3.0, and V 1.0-1.6% with (2Mo + W) 8-24%. The tool steels optionally contain addnl. Ni 0.25-1.5, B 0.001-0.10, Nb .ltoreq.3.0, Co .ltoreq.5.0, misch metal .ltoreq.0.60, Y .ltoreq.2.0, Zr .ltoreq.2.0, and/or Hf .ltoreq.2.0%. The cold-working dies or finishing-mill rolls </p> | | | | |
| are | <p> nominally finished by heating in vacuum furnace, quenching, and then tempering at .gtoreq.500.degree. to Rockwell C-scale hardness .gtoreq.64. </p> | | | | |